

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TERRILL A. YOUNG, SUSAN L. WILKING, THOMAS EDWARD SCHULTE, LAURA GRAVES VANRIJSWIJCK KIELY, and DONALD C. ROE

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Appeal 2006-3399  
Application 09/398,842  
Technology Center 3700

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Decided: April 23, 2007

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Before JENNIFER D. BAHR, STUART S. LEVY, and LINDA E. HORNER,  
*Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

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### STATEMENT OF THE CASE

Terrill A. Young et al. (“Appellants”) appeal under 35 U.S.C. § 134 from the Examiner’s final rejection of claims 1-3 and 5-20, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

### SUMMARY OF DECISION

We AFFIRM.

### THE INVENTION

Appellants’ claimed invention relates to absorbent articles, such as diapers, having a skin care composition disposed on the cuffs, where the composition is transferable to the wearer’s skin by normal contact and/or wearer motion and/or body heat (Specification 1:38-40). If hydrophobic skin care compositions are used, such compositions increase the containment/barrier properties of the cuffs, thereby improving their leak protection (Specification 5:13-15). These hydrophobic compositions allow for the use of nonwoven materials in the cuff design which can lead to reduced materials costs (Specification 5:15-18). Claim 1, reproduced below, is representative of the subject matter on appeal.

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1. An absorbent article to be worn by a wearer adjacent the skin, the absorbent article comprising:
  - a chassis comprising:
  - an outer covering layer comprising:
  - a backsheet; and
  - a liquid pervious topsheet joined to said backsheet;

and

  - an absorbent core positioned between said topsheet and said backsheet;

a cuff joined to said chassis, each said cuff having a first surface and a second surface disposed opposite said first surface, said cuff comprising a nonwoven consisting essentially of metallocene propylene spunbond fibers having a denier less than about 1.3 and wherein said nonwoven has a hydrostatic head of at least about 85 mm.

#### THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Lawson	US 4,695,278	Sep. 22, 1987
Gillespie	US 5,783,503	Jul. 21, 1998
Shultz	US 6,103,647	Aug. 15, 2000
Roe	US 6,120,783	Sep. 19, 2000

The following rejections are before us for review.

1. Claims 1-3 and 5-20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Roe, Gillespie, and Shultz.
2. Claims 1, 2, 5, 6, and 17-19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Lawson, Gillespie, and Shultz.

## ISSUE

Appellants contend the Examiner erred in both rejections of the claims because the Examiner improperly read “consisting essentially of” to modify the type of nonwoven instead of the composition of the fibers (Br. 4). Appellants further contend the Examiner erred because Gillespie achieves low denier fibers only by splitting multicomponent filaments, and such a blended structure is materially different than the claimed single component structure (Br. 5, 6). Appellants further contend the prior art is not properly combinable because it would change the principle of operation of Gillespie (Br. 5).

The Examiner relies on Roe and Lawson to teach barrier cuffs made of spunbond polypropylene (Answer 4, 6). The Examiner relies on Gillespie to teach microdenier fibers made from polypropylene in spunbond products such as leg cuffs of diapers (Answer 4, 6). The Examiner relies on Shultz to teach metallocene polymers developed by spunbonding (Answer 4, 6). The Examiner found it would have been obvious to have made the barrier cuffs of Roe or Lawson from the microdenier fibers of Gillespie to produce nonwovens of surprising strength, barrier, and cover, as taught by Gillespie (Answer 4, 6). The Examiner further found it would have been obvious to use metallocene polypropylene fibers, as disclosed in Shultz, for the polypropylene fibers of Roe or Lawson, in order to provide a fabric that has the advantages of metallocene polymers as stated in Shultz (Answer 4-6).

The issue before us is whether Appellants have shown the Examiner erred in finding that the combined teachings of Roe, Gillespie, and Shultz, or Lawson, Gillespie, and Shultz, renders the claimed subject matter obvious.

#### FINDINGS OF FACT

We find the following facts by a preponderance of the evidence:

1. Independent claim 1 recites that the cuff comprises “a nonwoven consisting essentially of metallocene propylene spunbond fibers having a denier less than about 1.3.”
2. The Specification describes the fiber composition as follows:

A more particularly preferred nonwoven material for use as a barrier cuff 62 of the present invention, which has been shown to provide improved gentleness to the skin of the wearer, is a very fine denier, entirely spunbonded nonwoven made with at least about 65%, more preferably 100%, very fine denier metallocene polypropylene fibers. (Specification 18:17-21).

3. As such, the Specification provides that the nonwoven can be made with as little as 65% metallocene polypropylene fibers.
4. Accordingly, “a nonwoven consistently essentially of metallocene propylene spunbond fibers having a denier less than about 1.3,” when read in light of the Specification, means that at least 65% of the spunbond fibers are metallocene polypropylene spunbond fibers having a denier less than about 1.3.

5. Gillespie discloses micro-denier continuous filaments obtained from relatively high molecular weight polymers typically associated with spunbonding processes (Gillespie, col. 2, ll. 38-42).
6. Gillespie provides hollow multicomponent thermoplastic continuous filaments where the components may be selected to promote splitting into micro-filaments (Gillespie, col. 2, ll. 53-59).
7. Gillespie teaches using a hollow core spinneret to make the filaments, where the hollow core promotes separation of the filament components as the filaments free fall from the spinneret. (Gillespie, col. 2, ll. 62-65 and col. 4, ll. 48-53).
8. Gillespie discloses that the filaments can be used to produce nonwoven webs in which a single layer of the web has spun-laid or spun-bonded micro-denier filaments that originate from a common capillary in the spinneret (Gillespie, col. 3, ll. 19-24).
9. Gillespie discloses that the webs include first and second smaller filaments that originate from the common capillary in the spinneret. Each of the first and second filaments includes at least one component of a parent multicomponent filament. The smaller filaments may include monocomponent filaments and/or those filaments with the first and second components present (Gillespie, col. 3, ll. 24-30).
10. Gillespie teaches that suitable polymers for practice of the invention include polypropylene (Gillespie, col. 5, ll. 4-5).

11. Gillespie discloses that the invention can be used to produce filaments having deniers in the range of from about 0.1 to 0.3 denier per filament (Gillespie, col. 6, ll. 28-29).
12. Gillespie discloses that nonwoven fabrics made with the splittable filaments are particularly useful as components for disposable absorbent articles, including diaper components, other sanitary products, and wipes (Gillespie, col. 6, ll. 60-63). Gillespie further teaches using spunbonded webs made with splittable micro-filaments to produce fabrics with “superior barrier” and “superior softness” to reduce red-marking of the wearer’s legs (Gillespie, col. 7, ll. 16-25).
13. Gillespie discloses a sample of a spunbonded nonwoven web made of split filaments. The multicomponent filament includes 10% Nylon 6 and 90% polypropylene 12-MFR. The diameter of the split micro-denier filaments is 0.41 to 0.89 (Gillespie, col. 10, ll. 19-61 (Table 1, Sample # 13617-05B)).
14. As such, Gillespie discloses a sample spunbonded nonwoven web for diaper cuffs made of 100% spunbonded fibers, where the fibers are 90% monocomponent polypropylene.
15. Gillespie does not disclose using metallocene polypropylene for the polypropylene component of the filaments.
16. Shultz discloses using thermoplastic polymers, including “metallocene” polymers in the production of webs for use in personal care products, such as diapers, training pants, absorbent underpants,

adult incontinence products, and feminine hygiene products (Shultz, col. 4, ll. 59-63, col. 6, ll. 27-30, and col. 9, l. 29).

17. Shultz teaches that metallocene polymers may be processed by spunbonding and have excellent barrier, breathability, elasticity and a pleasing hand (Shultz, col. 9, ll. 26-32).

#### PRINCIPLES OF LAW

The use of the transitional phrase “consisting essentially of” signifies a middle ground between a closed claim and a fully open claim.

“Consisting essentially of” is a transition phrase commonly used to signal a partially open claim in a patent. Typically, “consisting essentially of” precedes a list of ingredients in a composition claim or a series of steps in a process claim. By using the term “consisting essentially of,” the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention. A “consisting essentially of” claim occupies a middle ground between closed claims that are written in a “consisting of” format and fully open claims that are drafted in a “comprising” format.

*PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998) (citations omitted). “In view of the ambiguous nature of the phrase [“consisting essentially of”], it has long been understood to permit inclusion of components not listed in the claim, provided that they do not ‘materially affect the basic and novel properties of the invention.’” *AK Steel Corp.*

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*v. Sollac*, 344 F.3d 1234, 1239, 68 USPQ2d 1280, 1283 (Fed. Cir. 2003) (quoting *PPG Indus.*, 156 F.3d at 1354; and *In re Janakirama-Rao*, 317 F.2d 951, 954, 137 USPQ 893, 896 (CCPA 1963)).

When an applicant contends that additional steps or materials in the prior art are excluded by the recitation of “consisting essentially of,” applicant has the burden of showing “the basic or novel characteristics of [applicant's invention].” *In re De Lajarte*, 337 F.2d 870, 874, 143 USPQ 256, 258 (CCPA 1964). *See also PPG Indus.*, 156 F.3d at 1355, 48 USPQ2d at 1355 (“PPG could have defined the scope of the phrase ‘consisting essentially of’ for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention.”).

To determine whether a *prima facie* case of obviousness has been established, we are guided by the factors set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), *viz.*, (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. In addition to our review of the *Graham* factors, we also consider whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1337 (Fed. Cir. 2006).

## ANALYSIS

Appellants argue all of the claims as a group (Br. 3). As such, we treat claim 1 as a representative claim, and the remaining claims 2, 3, and 5-20 stand or fall together with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2006).

When claim 1 is read in light of the specification, the claim requires that the cuff includes a nonwoven made of spunbond fibers that are at least 65% metallocene polypropylene fibers having a denier less than about 1.3 (Findings of Fact 1-4). Gillespie discloses that a diaper cuff can be made of a nonwoven, spunbonded web of micro-denier filaments where 100% of the web is made of spunbonded fibers and where 90% of the filaments are monocomponent polypropylene having a denier less than 1.3 (Findings of Fact 5-14). Appellants contend that the split micro-denier fibers of Gillespie “would be made up of a fibrous blend containing both metallocene polypropylene fibers and fibers of another thermoplastic polymer where both types of fibers are between about 0.1 and 0.3 denier” (Br. 5). We disagree with this reading of Gillespie. Gillespie discloses that the micro-denier filaments can be monocomponent filaments, i.e., filaments that comprise only one component such as polypropylene from the parent multicomponent filament (Finding of Fact 9). In the sample disclosed in Gillespie having 90% polypropylene, the resulting nonwoven spunbonded web would include greater than 65% polypropylene fibers having a denier less about 1.3 (Findings of Fact 13, 14). The only teaching that Gillespie is missing is that the fibers are metallocene polypropylene (Finding of Fact 15).

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Shultz discloses using spunbonded metallocene polymers in the production of webs for use in diapers (Finding of Fact 16, 17). We agree with the Examiner that it would have been obvious to one having ordinary skill in the art, in light of the teaching in Shultz, to have used metallocene polypropylene in the nonwoven spunbonded diaper cuffs of Gillespie. Both Gillespie and Shultz teach using polypropylene fibers for spunbonded webs for diapers (Findings of Fact 12, 17). Gillespie uses spunbonded webs to produce fabrics with “superior barrier” and “superior softness” to reduce red-marking of the wearer’s legs (Finding of Fact 12). Shultz specifies the advantages of the new class of “metallocene” polymers, including excellent barrier, breathability, elasticity, and a pleasing hand, all of which are important characteristics for a material to be used for diaper cuffs (Finding of Fact 17). These acknowledged advantages of metallocene and the common purpose of the teachings of the two references, would have suggested to one having ordinary skill in the art at the time of the invention to substitute metallocene polypropylene as suggested by Shultz, for the polypropylene component of Gillespie, to lead to the claimed invention.

#### CONCLUSIONS OF LAW

We conclude that Appellants have not met their burden of showing that the Examiner erred in determining that claims 1-3 and 5-20 are unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Roe, Gillespie, and Shultz. We also conclude that Appellants have not met their burden of showing that the Examiner erred in determining that claims 1, 2, 5, 6, and 17-19 are unpatentable

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under 35 U.S.C. § 103(a) over the combined teachings of Lawson, Gillespie, and Shultz.

## DECISION

The decision of the Examiner to reject claims 1-3 and 5-20 is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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